

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number
WO 2004/056551 A1

(51) International Patent Classification⁷: **B29C 47/10**

(21) International Application Number:
PCT/EP2003/014501

(22) International Filing Date:
18 December 2003 (18.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
MI2002A002736
20 December 2002 (20.12.2002) IT

CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant and
(72) Inventor: **DE MARIA, Massimo** [IT/IT]; Via Monterosa, 22/B, I-21040 Oggiona S. Stefano (IT).

(74) Agent: **MODIANO, Guido**; Modiano & Associati, Via Meravigli, 16, I-20123 Milano (IT).

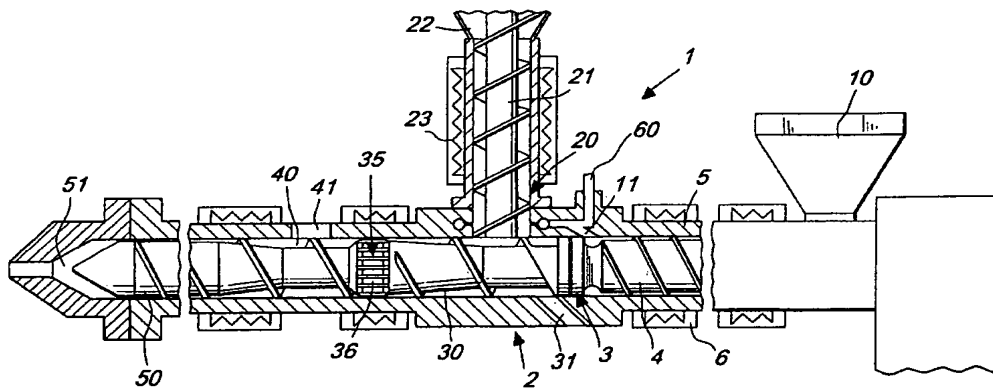
(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR PRODUCING COMPOSITE MATERIALS SUCH AS THERMOPLASTIC RESINS WITH MINERAL AND/OR VEGETABLE FILLERS



(57) Abstract: A method for producing composite materials, such as thermoplastic resins with mineral and/or vegetable fillers, consisting in feeding a mineral and/or vegetable filler, preheating the filler, feeding a melted thermoplastic resin onto the filler, introducing the mixture of the filler and the thermoplastic resin in an extruder, subjecting the mixture to high compression, producing a high partial vacuum, and compressing the mixture in an extrusion head, out of which the material to be subjected to subsequent treatments flows.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/14501

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B29C47/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B29C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 100 16 508 A (FACT FUTURE ADVANCED COMPOSITE) 4 October 2001 (2001-10-04) paragraphs '0034!', '0035! column 5, line 16 - line 18; claim 8; figure	1-21
X	EP 0 439 625 A (SUMITOMO CHEMICAL CO) 7 August 1991 (1991-08-07) page 3, line 31 - line 44; figure 5	1-21
X	DE 40 16 410 A (BASF AG) 28 November 1991 (1991-11-28) column 2, line 30 - line 41	1-21
X	US 6 255 368 B1 (ENGLISH BRENT W ET AL) 3 July 2001 (2001-07-03) abstract; figure 1	1-21



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

21 Apr 11 2004

Date of mailing of the international search report

03/05/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Attalla, G

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/14501

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 10016508	A	04-10-2001	DE 10016508 A1	04-10-2001
EP 0439625	A	07-08-1991	JP 2917372 B2	12-07-1999
			JP 3261519 A	21-11-1991
			JP 2850392 B2	27-01-1999
			JP 3076614 A	02-04-1991
			CA 2039160 A1	22-02-1991
			DE 69021361 D1	07-09-1995
			DE 69021361 T2	29-02-1996
			EP 0439625 A1	07-08-1991
			KR 181510 B1	15-05-1999
			CA 2027741 A1	17-04-1991
			EP 0423676 A2	24-04-1991
			ES 2077684 T3	01-12-1995
			WO 9102639 A1	07-03-1991
			US 5424020 A	13-06-1995
			US 5275776 A	04-01-1994
DE 4016410	A	28-11-1991	DE 4016410 A1	28-11-1991
US 6255368	B1	03-07-2001	US 5938994 A	17-08-1999